User Manual

ISIS 900 CCTV Monitor
Hazardous Area System

Manual Part Number: 455575

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Section 1: General

This section of the user manual covers all general aspects of the unit, from receiving/transport, installation and use of system

1. Manufacturer Information

Shipping Address for Repairs/Upgrades

ISIS-Ex Limited
Unit A & B, Windmill Industrial Estate
Showfield Lane
MALTON
North Yorkshire
UK
YO17 6BT

Telephone: +44 1653 699908 Fax: +44 1653 699904

mailto: sales@isis-ex.com

www.isis-ex.com

Repairs

All repairs to be sent to above address.

Service, repairs and support helpline: +44 1653 699996

service@isis-ex.com

Disclaimer

Systems are delivered without application software; users should satisfy themselves that any such software is compatible with the equipment ordered. On request, and without prejudice, ISIS-Ex Limited can provide assistance in this respect

Last revised: 9th October 2009

2. General Safety Information

ISIS 900 CCTV Monitor systems can ONLY be used within the bounds of their certification, details of which can be found under chapter 3.2 Environmental & Technical Specifications. Any external connectors/cable glands are covered by the manufacturers own safety instructions. Any visible damage should be checked to avoid electrical or Ex hazards

The maintenance and inspection of the system is to be performed according to EN 60079-17/60079-1 (NEK420) standards.

If any damage is found, the enclosure should be put out of service and the manufacture contacted.

Further technical information's is available on www.isis-ex.com

NEVER POWER UP A UNIT IN ZONES 1 OR 2 IF:

- The flame path is damaged.
- The glass is cracked, broken or deeply chipped.
- Any of the connectors or cables are damaged

These are vital parts to safety.

Repairs of the flameproof joints must be made in compliance with the structural specifications provided by the manufacturer. Repairs must not made on the basis of values specified in tables 1 and 2 of EN 60079-1

A unit with a damaged keyboard or mouse should be taken out of service and repaired before use.

Any modification or unauthorized repair of the unit will void certification.

Read this manual thoroughly before attempting to install, use or service the system. ONLY certified personnel are permitted to open this enclosure. (Certified Personnel means approved by ISIS-Ex or operator/owner with proper training in handling certified equipment for use in hazardous areas).

Warnings and cautions are stated in several places in the manual, mainly for the security and safety of the personnel, but also to protect the equipment from damage.

3. ISIS 900 CCTV Monitor Specification

3.1. General Specifications

The ISIS 900 CCTV Monitor has been designed to function in hazardous areas. Rated at IP66, the unit can be used in zones 1 and 2 both on and off shore. There is no need for an intrinsically safe interface or pressurized air-connection. The monitor is AC powered, auto-ranging from 90 V to 260 V (50-60 Hz).

The monitor contains a 19" (48 cm) TFT high Bright LCD display, graphics card with VGA, composite and S-video inputs.

For the Camera Control Junction Box Option - The cable access is via an M25 entry on the back of the Junction Box. All user operations take place at the front.

3.2. Environmental & Technical Specifications

Rating: The ISIS 900 CCTV Monitor is certified by DNV as Zone 1 and 2 rated equipment for use in hazardous areas, without purge.

Approvals: II 2 G Ex d IIB T6 (Without Camera Control Junction Box)

II 2 G Ex d e IIB T5 (With Camera Control Junction Box)

Certificate: DNV 09 ATEX 62922X

Special Conditions for Safe Use: Repairs of the flameproof joints must be made in compliance with the structural specifications provided by the manufacturer. Repairs must not be made on the basis of values specified in tables 1 and 2 of EN 60079-1.

Temperature:

0^{o} to $+45^{o}$ Celsius, operating.
-20^{o} to $+70^{o}$ Celsius, non-operating.

Humidity:

10 to 90 % non-condensing, operating.
0 to 100 % non-operating.

Power Requirements:

AC option: 90-260 V_{ac}, 50-60 Hz,

Weight:

Approx. 40 kg (88 lbs)

Enclosure Size:

Enclosure - 520W x 389H x 165D mm (20.5”W x 15.3”H x 6.5”D)

Junction Box - 520W x 156H x 165D mm (20.5”W x 6.1”H x 6.5”D)

Entry Gland Threads:

Entry holes may already have connectors, glands or line bushings fitted. Unused entry holes must have certified blanking plugs fitted. For enclosure entry hole size and thread details refer to Appendix B

Mounting bolts:

All nuts and bolts are metric size unless otherwise stated.
Standard Mounting holes are: 4off M8x1.25 on side of enclosure
[4off M10x1.5 on underside of enclosure]

Material:

Enclosure – Aluminium AA 6082, with powder coating finish
Junction Box, fixings and accessories – Stainless Steel AISI 316

Environmental:

ISIS-Ex in co-operation with third party verification performed by NEMKO Notified Body has found that all ISIS products are outside the scope of the RoHS directive. However, this ISIS product is manufactured with RoHS compliant parts and ISIS-Ex strives to fulfil the European Directive, 2002/95/EC on the restriction of hazardous Substances.

In order to protect the environment and comply with the 2002/96/EC European Directive on Waste Electrical and Electronic Equipment (WEEE) all ISIS products must be returned to your local supplier at the end of it's lifetime for recycling and material recovery.

Regulatory:

This product also complies with CE emissions and immunity requirements to Class A limits.

WARNING: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

4. Receiving and Unpacking the ISIS 900 CCTV Monitor

4.1. Transport

Enclosures to be transported with suitable transport mode, e.g. lorry, ship, post, airfreight.

4.2. Receiving the ISIS 900 CCTV Monitor

Each unit is normally delivered in a single wooden crate.

Note: If no custom transport box is available, all enclosures to be mounted to pallets with back side down and fastened with screws or steel bands. Front side to be protected with suitable material, plastic, expanded polyester and/or other suitable packing material.

Immediately upon receipt of the system inspect the packing crate for visible damage. Notify the transport carrier if damaged.

If the contents in the packing crate appear to be damaged or missing contact a ISIS-Ex representative as soon as possible.

4.3. Unpacking the ISIS 900 CCTV Monitor

Caution: The unit weighs approximately 40 kg (88 lbs). Proper lifting techniques should be used when moving/lifting the unit. The unit may damage other equipment or injure personnel if not handled safely.

Please retain the packaging in case of return.

4.4. Handling

Due to the weight and nature of the enclosures precautions have to be taken to avoid damage to the equipment and the individual. The enclosure flame paths must be securely protected to avoid damage, all openings that are not sealed constitute a flame path.

5. ISIS 900 CCTV Monitor Installation/Uninstalling

5.1. Installation

Optional lifting handles, brackets, stands and sunshields are available, and may aid lifting and mounting of the unit. Please contact your ISIS-Ex representative for further details.

When mounting the enclosure ensure that the mounting support is able to take the full weight of the enclosure. If any twisting or bending is likely, use washers or packing plates as necessary before the screws or nuts are tightened.

The ISIS 900 CCTV Monitors are designed for use anywhere except in Ex Zone 0 or underwater. Local power cable and communication cable(s) must be installed according to Safety Regulations and local owners' instructions.

Caution: The unit weighs approximately 40 kg. Proper lifting techniques should be used when moving/lifting the unit. The unit may damage other equipment or injure personnel if not handled safely.

1. Inspect the unit and connectors for visible defects. The unit must be returned for repair if there are any defects that will void Ex safety.

2. Lift the unit up to the mounting point using an appropriate lifting technique. Take care not to damage the cables. For additional information on mounting brackets/stands options, please contact your ISIS-Ex representative.

3. Connect the Ground Terminal to ground (Earth) with a cable.

4. Inspect power, communication-cables and connectors for damage.

5. Do not connect power to the ISIS system before all communication-cables are connected.

5.2. Power-up Procedure

1. Verify that power is specified as indicated on the certification plate:

   AC power Option - 90-260 V_{ac} (50-60 Hz)

2. Connect all external cables according to Safety Regulations and local owners' instructions.

3. Power up the unit by supplying power to the power cable. The unit has no on/off power switch, therefore a disconnection device for the equipment should be readily accessible.

4. Verify that all components are working. Allow 5 seconds for the screen to brighten.

5.3. Uninstalling

1. Isolate power prior to disconnecting the power cable to the unit.

2. Disconnect all communication-cables.

3. Disconnect Ground Terminal

4. Lift the unit down from the mounting point using an appropriate lifting technique. Take care not to damage the cables.

6. Using The ISIS 900 CCTV Monitor

6.1. General

The ISIS 900 CCTV Monitor behaves like an ordinary CCTV Monitor. Once installed there should be few differences than working with a standard CCTV in a safe area.

The LCD is set for a resolution of 1280x1024. Ensure that the relevant resolution is used to get the best viewing quality. Use a larger font or different pointer size to get better readability instead of decreasing the resolution.

Even though the unit is built for extreme conditions, it still requires regular maintenance for safety reasons. The maintenance of the system is to be performed according to EN 60079-17.

Section 2: Technical

This part of the manual is only intended for service personnel, there are no user serviceable parts inside the unit.

Only certified technical personnel may open and install cables inside the unit.

(Certified Personnel means approved by ISIS-Ex or operator/owner with proper training in handling certified equipment for hazardous areas).

7. Opening and Closing of The Unit

Certified Product.

No modifications permitted without the approval of the Certifying Authority and manufacturer.

Never open in hazardous area.

Certified personnel only! Read all instructions before opening.

No parts should be substituted without the approval of ISIS-Ex.

Caution: The unit weighs approximately 40 kg. Proper lifting techniques should be used when moving/lifting the unit. The unit may damage other equipment or injure personnel if not handled safely.

Caution: Damage to the flame path will void the Ex safety and the unit must be returned to manufacturer for repair/exchange.

Contact manufacturer for verification if in doubt.

7.1. Opening The Unit

- Remove unit from hazardous area before opening. See sub-section on Uninstalling unit.

Caution: Hazardous voltages are accessible upon removal of lid

- Check that all external cables are unplugged and that there is no power to the unit before commencing opening.
- Clean the unit prior to opening to avoid getting dirt inside.
- Place the unit face down on a clean steady desk.
- Remove all back plate bolts.
- Remove protective coating of acid free petroleum jelly.

7.2. Closing The Unit

- Always inspect after a repair or anytime a unit has been opened
- Remove any dirt from the mating surfaces of the main enclosure and the back plate.
- Check the flame path is undamaged. Never use the unit if the flame path is damaged. The maximum surface roughness allowed for the flame path is 6.3µm
- Reapply a thin layer of acid free petroleum jelly on both parts of the flame path.
- Refit all M8x35 mm bolts to secure the back plate to the main enclosure. Apply a thin film of non setting grease (Do not use copper grease) to bolt threads, ensuring that a bead of grease does not form on the end of the bolt. This could damage the enclosure and/or prevent the correct torque being applied thus ensuring that the integrity of the flamepath is maintained
- Tighten bolts in cross pattern with the following torque: Minimum 15 Nm (11 lbf.ft), maximum 21 Nm (15 lbf.ft). Tool size is a 6 mm Allen key.

Recommended 18 Nm (13 lbf ft)

Only bolts supplied by ISIS-Ex are approved for use in the back plate.

Bolts must comply with DIN912 (ISO4762), be M8x35 mm with a pitch of 1.25 mm, and have A4-80 marked on the head.

Caution: Do not connect power before installation is completed and lid properly fitted to enclosure.

8. Opening and Closing of The Camera Control Junction Box Option

Certified Product.

No modifications permitted without the approval of the Certifying Authority and manufacturer.

Never open in hazardous area.

Certified personnel only! Read all instructions before opening.

No parts should be substituted without the approval of ISIS-Ex.

Caution: The unit may be heavy, depending on variation. Proper lifting techniques should be used when moving/lifting the unit. The Unit may damage other equipment or injure personnel if not handled safely.

8.1. Opening The Junction Box

- Remove the unit from the hazardous area before opening the Junction Box. See sub-section on Uninstalling the unit in the main manual.
- Check that all external cables are unplugged and that there is no power to the unit before commencing opening.
- Clean the unit prior to opening the Junction Box to avoid getting dirt inside.
- Place the unit back/lid down on a clean, robust bench. Ensure that the connectors on the rear of the box overhang the bench.
- Undo the four captive bolts holding the front panel on. Carefully remove the panel.

8.2. Closing The Junction Box

- Always inspect after a repair or anytime a Junction Box has been opened
- Remove any dirt from the mating surfaces of the Box and the front panel.
- Place an IP66 indicator slip on the edge of the Box between two securing screw threaded holes
- Close the lid of the Box, trapping the indicator slip and secure the lid using the captive screws.
- Tighten all the captive screws such that the indicator slip cannot be pulled out by hand.

9. Installation Instruction

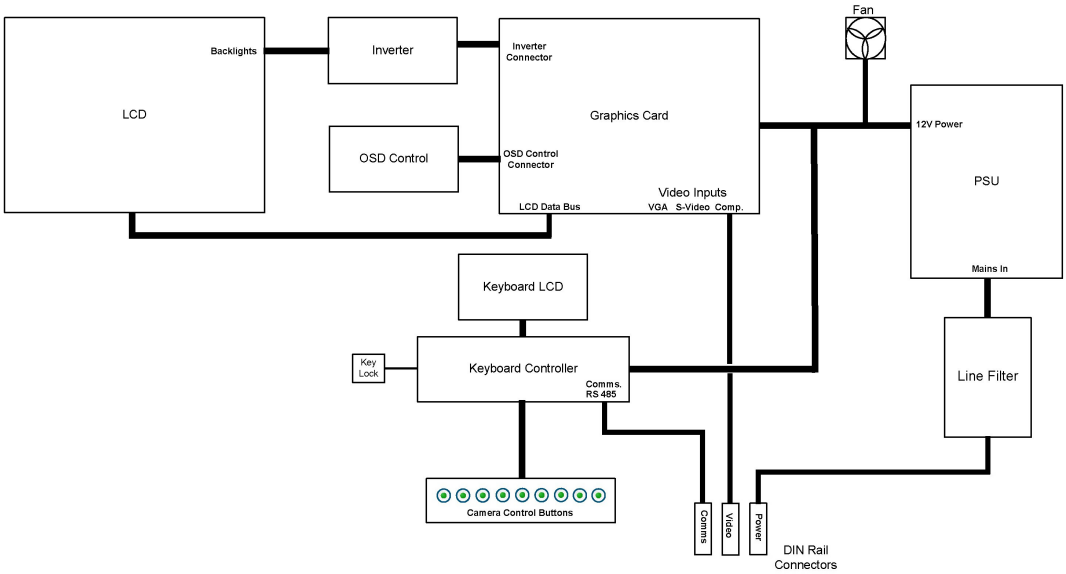
ESD Hazard: Delicate equipment inside, use ESD ground-strap when working inside the ISIS 900 CCTV equipment.

Caution: Damage to any of the cables/wires going from the outside to the inside of the enclosure is not repairable, and the unit must be returned to manufacturer for service.

Mounting of electrical/electronic material inside the enclosure must be performed by skilled personnel only and done according to existing standards and regulations. Make sure that the installation of the enclosure is according to the regulations stated in the certificate.

9.1. Unit Block Diagram

9.1.1. ISIS 900 CCTV Monitor with Camera Control Junction Box Option



9.2. User Cable Additions

To ensure ongoing compliance with the European EMC directive and American FCC, EMC, Rules, the following must be observed when installing User cables to the ISIS 900 CCTV.

In addition, all entries to the enclosure/junction box must be of Ex-approved types and all other openings closed with an approved blanking plug.

9.2.1. Cable Screening

All signal/communication cables must be screened. The screen must be terminated correctly at the cable entry gland to the enclosure.

9.2.2. Ferrites

A 'Clamp On' type ferrite must be fitted to every signal cable that enters the enclosure.
Note: A ferrite is not required on the power cable.

As a guide, the ferrite characteristics should typically be:

Material: Nickel Zinc (E.g. Grade 4S2)

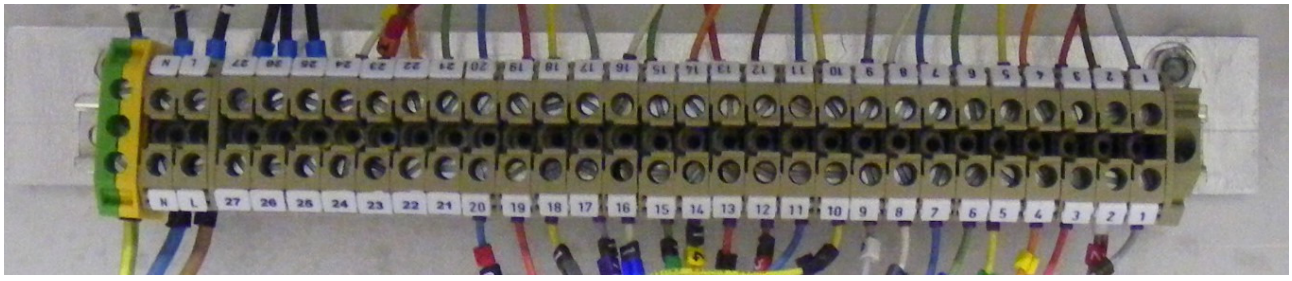
Shape: Tubular

Impedance: 145R at 25 MHz, 225R at 100 MHz

9.3. Power and Comms Connection

9.3.1. ISIS 900 CCTV Monitor with Camera Control Junction Box Option

Connections for the User power, video and serial communications can be accessed from the Junction Box.



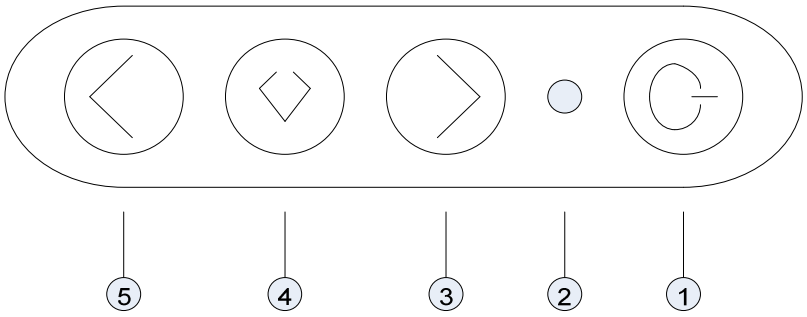
Connection	PIN
Spare	21
Spare	22
Composite Video Signal	23
Composite Video Shield	24
RS 485 Data +	25
RS 485 Data -	26
RS 485 Data Signal GND	27
Power In (Live)	L
Power In (Neutral)	N
Earth	Earth

9.4. LCD Configuration

The screen geometry settings for the LCD panel are set prior to shipping. If the screen geometry requires adjustment then the On Screen Display (OSD) panel can be used. The OSD control panel is situated within the ISIS 900 CCTV enclosure. Please return the ISIS 900 CCTV with Camera Control Box to a qualified technical personnel in a safe area for re-configuration.
Refer to section 7.

The OSD menu/settings are displayed on the Monitor screen. The ISIS 900 CCTV Monitor must have a video signal present in order for the OSD to function.

9.4.1. OSD Membrane Control Panel



OSD Panel

1 – Power Switch: Pushing the power switch will turn the monitor on. Pushing it again will turn the monitor off.

2 – Power LED: Power ON-Green / Standby –Orange / Power off-No illumination.

3 – Up Key>: Increase Item number or value of the selected item.

4 – Menu Key: Enter the OSD adjustment menu. It is also used to go back to a previous menu or sub-menu, and the change data don't save to memory.

5 – Down Key <: Decrease item number or item value when OSD is on.

10. Frequently Asked Questions

1. **Why is there a "power saving" or "no signal" message on the LCD?**

   The LCD/VGA system detects the absence of a video signal from the source, and gives a message on the LCD indicating that it is still powered, but no signal is present. However, after a small delay, the system then goes into standby, until a video signal is present. Supply the video signal, and re-power the unit.

2. **Why is it advised to re-power the ISIS 900 CCTV Monitor?**

   If the video controller detects no video, and has gone into standby, it is easier to re-power the unit than to open it in a hazardous area.

3. **How do I switch the ISIS 900 CCTV Monitor ON/OFF?**

   There are no keys for manually switching the unit on or off. Ensure that there is a power disconnection device readily accessible.

4. **How many colours can the LCD display?**

   It will work fine with all colour depths from 16 to 16.7 million colours.

5. **Why is the unit so heavy?**

   An explosion proof capsule needs to be tough to maintain constant Ex safety. The main body is made from machined aluminium alloy, with 25 mm glass in front of the LCD.

6. **What maintenance does the unit need?**

   No daily maintenance; only cleaning the screen with a damp cloth when necessary. Once a year, the unit needs a routine safety check. Never use the unit if anything is damaged.

   Maintenance should be performed in accordance with the EN-60079-17:2007/6079-1 (NEK420) standards.

7. **Why is the picture on screen best with 1280x1024 resolution?**

   Most 19" LCD's are made for that resolution. Each pixel on the LCD screen is fixed in size, and is not dynamically sizable as on a CRT. With a lower resolution, pixels get joined like LEGO bricks. Most video signals have between 300-700 lines, and will not match all pixels.

11. Troubleshooting on Site

1. No picture or light on the screen:

- Check video source/cables
- Re-power unit
- Check power cable
- Return unit to a safe area for repair

2. No picture, but light on the screen:

- Check video source/cables
- Return the unit to a safe area for repair

3. Power saving message on screen:

- Check video source/cables
- Return unit to a safe area for repair

4. Too dim/bright picture on screen:

- Check video source/cables
- Return the unit to a safe area for repairs/OSD adjustment.

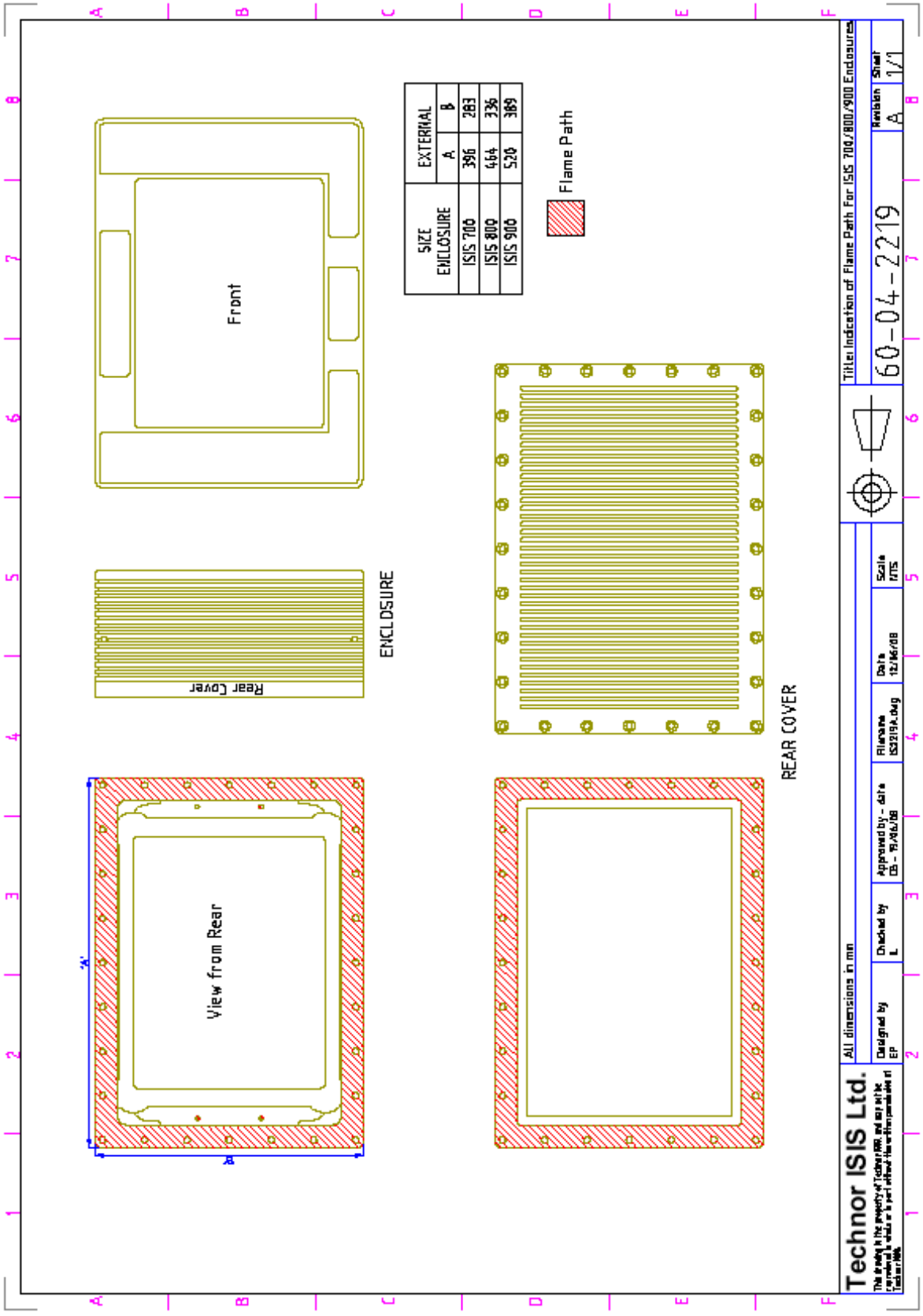
5. Strange colours on screen:

- Check video source
- Return the unit to a safe area for repairs

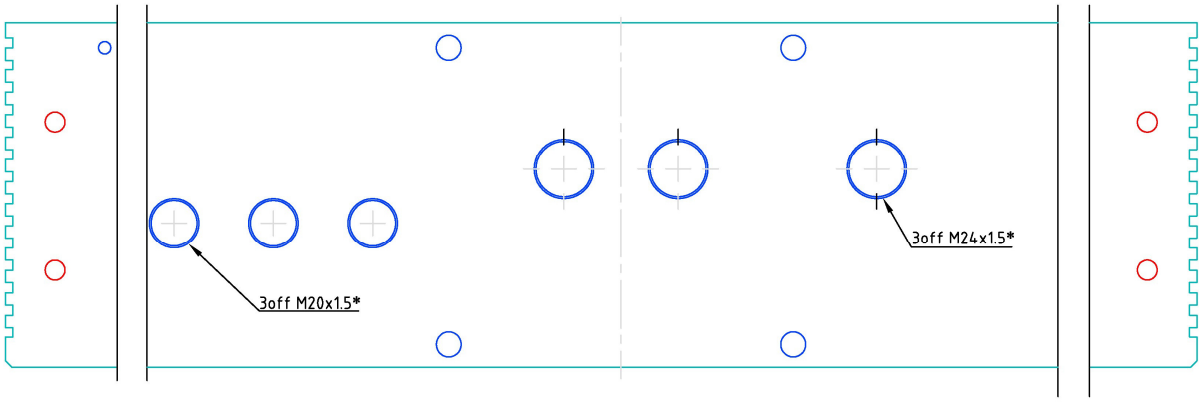
6 There is a picture on screen, but part of it is missing:

- Check the video source/cable
- Return the unit to a safe area for OSD adjustments.
- Check detail about video source/cables and conditions

Appendix A: Indication of flame path drawing



Appendix B: Enclosure Entry Details



Thread Tolerance According ISO 965/1 and 3, 6g

Appendix C: Enclosure Certificate

Nemko

[1] EC-TYPE EXAMINATION CERTIFICATE

[2] Component Intended for use on/in equipment or protected system intended for use in Potentially explosive atmospheres Directive 94/9/EC

[3]	**EC-Type Examination Certificate Number :**	**Nemko 99ATEX377U**
[4]	**Component :**	**Enclosure**
[5]	**Applicant:**	**Technor asa**
[6]	**Address :**	**Postboks 658 Dusavikveien 39 4003 STAVANGER**
[5]	**Manufacturer:**	**Technor asa**
[6]	**Address:**	**Postboks 658 Dusavikveien 39 4003 STAVANGER**

[7] This Component and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] Nemko AS, notified body number 0470 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. : 199925237

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
CENELEC EN 50014: 1997 + A1:1999 + A2:1999
CENELEC EN 50018: 1994

[10] The sign "U" placed after the certificate number indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.

[11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified component. If applicable, further requirements of this Directive apply to the manufacture and supply of this component.

[12] The marking of the component shall include the following :

Ex II 2 G EEx d IIB

1999-11-09

Rolf Hoel
Rolf Hoel
Head of section for Ex-equipment

Tore Irjall
Tore Irjall

This certificate may only be reproduced in its entirety and without any change, schedule included.

Postal address: P.O.Box 73 Blindern, N-0314 OSLO, NORWAY
Office address: Gaustadalléen 30, 0373 OSLO
Telephone: +47 22 96 03 30
Fax: +47 22 96 05 50
Enterprise number: NO 974404532

[13] Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 99ATEX377U

[15] Description of Component

An empty enclosure of aluminium, with/without window, with/without integrated bushing for flexible printed circuit and pointing device wires.

The enclosure can be mounted with an EEx e... box which is certified according to Directive 94/9/EC(ATEX). This "e" box must not by volume be bigger than ¼ of the "d" enclosure, and the mounting must be carried out by Technor.

Ingress protection

The enclosure complies with IP66 according to EN 60529 / IEC 529.

Type designation

TN 700 -.. .. ..

- .. Depth (max 160mm)
- .. Height (max 283mm)
- .. Width (max 396mm)

[16] Report No 199925237

Composed in total of 18 pages and 7 pages of descriptive documents.

Descriptive Documents

Title	Drawing No	Revision	Date
Back View	TN700-01-4	A	17.09.99
View A-A and B-B	TN700-02-4	A	17.09.99
Wall and flame part details	TN700-03-4	A	17.09.99
Wall and flame part details	TN700-04-4	A	17.09.99
Base View	TN700-05-4	A	17.09.99
Enclosure detail, Front View	60-04-1060	A	18.10.99
Merkeskilt for TN700	TN700-07-5	A	17.09.99

Routine Test:

The following routine test has to be made by the manufacturer. The enclosure shall be subjected to a pressure test of 1,5 times the reference pressure according to CENELEC EN 50018-94 clause 16

The routine test pressure is 11,25 bar

[17] Schedule of Limitations

The fastening screws for the cover must be at least of quality as spesified on drawings No. TN700-03-4 and TN700-04-4.

The temperature on the cementing, window and gaskets must not exceed 60°C.

[18] Essential Health and Safety Requirements

See item 9

This certificate may only be reproduced in its entirety and without any change, schedule included.

Postal address: P.O.Box 73 Blindern, N-0314 OSLO, NORWAY
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Telephone: +47 22 96 03 30
Fax: +47 22 96 05 50
Enterprise number: NO 974404532

Nemko 99ATEX377U Date: 2000-01-24

SUPPLEMENT 1 to EC-TYPE EXAMINATION CERTIFICATE

This EC-TYPE EXAMINATION CERTIFICATE is extended to include the following:
Alternative model type TN 800 with new dimensions as shown in the descriptive documents listed on page 2.

The examination and test results are recorded
in confidential report no. : **199947137**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
CENELEC EN 50014:1997 + A1:1999 + A2:1999
CENELEC EN 50018:1994

[12] The marking of the equipment or protective system shall include the following :

Ex II 2 G EEx d IIB

[13] Schedule

[15] Description of Component

An empty enclosure of aluminium, with/without window, with/without integrated bushing for flexible printed circuit and pointing device wires.

The enclosure can be mounted with an EEx e... box which is certified according to Directive 94/9/EC(ATEX). This "e" box must not by volume be bigger than ¼ of the "d" enclosure, and the mounting must be carried out by Technor.

Ingress Protection

The enclosure complies with IP66 according to EN 60529 / IEC 529.

Type Designation

TN 800 - .. .. ..
- → Depth (max 160mm)
- → Height (max 336mm)
- → Width (max 464mm)

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+47 22 96 05 50

Enterprise number:
NO 974404532

Nemko

Nemko 99ATEX377U Date: 2000-01-24

SUPPLEMENT 1 to EC-TYPE EXAMINATION CERTIFICATE

Descriptive Documents

Drawing title	Drawing No.	Rev	Date
ISIS/TN 800 EEx d Enclosure Back View	TN800-01-2	B	30.12.1999
ISIS/TN 800 EEx d Enclosure View A-A and B-B	TN800-02-2	C	20.01.2000
ISIS/TN 800 Wall and flame part details, section 1	TN800-03-2	B	30.12.1999
ISIS/TN 800 Wall and flame part details, section 2	TN800-04-2	B	30.12.1999
EEx d Enclosure type ISIS 800 Integrated with ISIS 700	TN800-05-2	B	30.12.1999
ISIS/TN 700-800-900 EEx d Enclosure Base View	TN700-05-4	B	30.12.1999
ISIS/TN 700-800-900 EEx d Enclosure Front View	TN700-06-4	C	20.01.2000
Merkeskilt for TN800	TN800-06-5	A	02.12.1999

Routine Test:
The following routine test has to be made by the manufacturer. The enclosure shall be subjected to a pressure test of 1,5 times the reference pressure according to CENELEC EN 50018-94 clause 16

The routine test pressure is 12,5 bar

Oslo, 2000-01-24

Rolf Hoel
Head of section for Ex-equipment

Tore Irjall
Certification Engineer

Nemko AS
P.O. Box 73, Blindern
N-0314 Oslo, Norway

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0373 Oslo

Telephone
+47 22 96 03 30

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+47 22 96 05 50

Enterprise number:
NO 974404532

Nemko

Nemko 99ATEX377U Date: 2000-06-29

SUPPLEMENT 2 to EC-TYPE EXAMINATION CERTIFICATE

This EC-TYPE EXAMINATION CERTIFICATE is extended to include the following:
Alternative model type TN 900 with new dimensions as shown in the descriptive documents listed on page 2.

The examination and test results are recorded
in confidential report no. : **200014136**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
CENELEC EN 50014:1997 + A1:1999 + A2:1999
CENELEC EN 50018:1994

[12] The marking of the equipment or protective system shall include the following :

Ex II 2 G EEx d IIB

[13] Schedule

[15] Description of Component

An empty enclosure of aluminium, with/without window, with/without integrated bushing for flexible printed circuit and pointing device wires.

The enclosure can be mounted with an EEx e... box which is certified according to Directive 94/9/EC(ATEX). This "e" box must not by volume be bigger than ¼ of the "d" enclosure, and the mounting must be carried out by Technor.

Ingress Protection

The enclosure complies with IP66 according to EN 60529 / IEC 529.

Type Designation

TN 900 - .. .. ..
- .. → Depth (max 160mm)
- .. → Height (max 389mm)
- .. → Width (max 520mm)

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Enterprise number:
NO 974404532

Nemko

Nemko 99ATEX377U Date: 2000-06-29

SUPPLEMENT 2 to EC-TYPE EXAMINATION CERTIFICATE

[16] Report No 200014136

Composed in total of 19 pages and 6 pages of descriptive documents.

Descriptive Documents

Drawing title	Drawing No.	Rev	Date
TN 900 EEx d Enclosure Back View	TN900-01-2	A	20.12.1999
TN 900 EEx d Enclosure View A-A and B-B	TN900-02-3	B	23.06.2000
TN 900 Wall and flame part details, section 1	TN900-03-2	B	23.06.2000
TN 900 Wall and flame part details, section 2	TN900-04-2	B	23.06.2000
EEx d Enclosure type ISIS 900 integrated with ISIS 800	TN900-06-2	A	23.06.2000
Merkeskilt for TN700, 800, 900	TN900-05-5	A	22.06.2000

[17] Schedule of Limitations

The fastening screws for the cover must be at least of quality as specified on drawings No. TN700-03-4 and TN700-04-4.

The operating temperature on the cementing, window and gaskets shall not exceed 60°C.

Routine Test:
The following routine test has to be made by the manufacturer. The enclosure shall be subjected to a pressure test of 1,5 times the reference pressure according to CENELEC EN 50018-94 clause 16

The routine test pressure is 11,8bar

Oslo, 2000-06-29.

Rolf Hoel
Head of section for Ex-equipment

for Tore Irjall
Certification Engineer

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Fax
+47 22 96 05 50
NO 974404532

Nemko 99ATEX377U Date: 2001-04-25

SUPPLEMENT 3

This EC-TYPE EXAMINATION CERTIFICATE is extended to include the following:

The certificate is extended to include modified versions of type TN 700 / TN 800 / TN 900 with new cementing.
The modifications are included in the descriptive documents.

The examination and test results are recorded in
confidential report no. : **200110109**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
CENELEC EN 50014:1997 + A1:1999 + A2:1999
CENELEC EN 50018:1994

Descriptive Documents

Drawing title	Drawing No.	Rev	Date
ISIS 700 EEx d Enclosure Wall and flame part details	TN700-03-4	C	04.04.01
ISIS 700 Wall and flame part details	TN700-04-4	C	04.04.01
ISIS/TN 800 EEx d enclosure Back View	TN800-01-2	C	04.04.01
ISIS/TN 800 EEx d enclosure View A-A and B-B	TN800-02-2	D	04.04.01
ISIS/TN 800 Wall and flame part details, section 1	TN800-03-2	C	04.04.01
ISIS/TN 800 Wall and flame part details, section 2	TN800-04-2	C	04.04.01
TN 900 Wall and flame part details, section 1	TN900-03-2	C	04.04.01
TN 900 Wall and flame part details, section 2	TN900-04-2	C	04.04.01

[17] Schedule of Limitations

The operating temperature on the cementing, window and gaskets shall not exceed 70°C.

Oslo, 2001-04-25.

Rolf Hoel
Head of section for Ex-equipment

Tore Irjall
Project Engineer

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Enterprise number:
NO 974404532

Appendix D: Junction Box Certificate

DNV

DET NORSKE VERITAS

EC-TYPE EXAMINATION CERTIFICATE

[2] EQUIPMENT OR PROTECTED SYSTEM INTENDED FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES DIRECTIVE 94/9/EC

[3] EC-Type Examination Certificate Number: **DNV-2003-OSL-ATEX-0042**

[4] Equipment or Protective System: **Junction Box, TNCC**

[5] Applicant – Manufacturer or Authorized representative: **Technor ASA**

[6] Adress: **Dusavikveien 39, P.O.Box 658, 4001 Stavanger, Norway**

[7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] DNV, notified body number 0575 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. **2003-3246**

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with: EN50014:1997+A1:1999+A2:1999, EN50019: 2000, EN50018, EN50028

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protected system. If applicable, further requirements of this Directive apply to the manufacturer and supply of this equipment or protective system.

[12] The marking of the equipment or protective system shall include the following :

Ex II 2 G, Ex code ref. section 15.1

Høvik, 10 June 2003
for Det Norske Veritas AS

Per Ove Øyberg
Head of Section

Bjørn Spongsveen
Senior Engineer

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million.In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

DET NORSKE VERITAS · VERITASVEIEN 1, 1322 HØVIK, NORWAY · TEL: (+47) 67 57 99 00 · FAX: (+47) 67 57 99 11
Form No.: 20.90a Issue: January 98

[13] **Schedule**

[14] **EC-TYPE EXAMINATION CERTIFICATE No: DNV-2003-OSL-ATEX-0042**

15 Description of Equipment:

15.1 The TNCC Junction Box is a complete assembly for termination, control and signalling devices and comprises of a stainless steel enclosure in various sizes up to max 1000x2000xXXX. The installation of equippment is based upon heat dissipation, if values deviate from the samples as described below, manufacture to verify the temparature class. Enclosures can be delivered with screws, hinges and screws, hinges and quick locks.
The certification of the enclosure is based upon technical specifications in certificate for TNCN, DNV-2001-OSL-ATEX-0176.

The Ex-code of the TNCC control cabinet is depending of the components used. The following variations are allowed:

Ex-code	Description
EEx e II T5	Junction box with terminals and other Ex-e components
EEx ed IIB/C T5	Control cabinet with control / signalling devices with Ex-code 'd'.
EEx em II T5	Control cabinet with components of Ex-code 'm'.
EEx edm IIB/C T5	Control cabinet with components code 'm' and control / signalling devices cod 'd
EEx ed[ia/ib] IIB/C T5	Control cabinet with control / signalling devices with Ex-code 'd', and 'd' Components with IS output.
EEx em[ia/ib] II T5	Control cabinet with 'm' components including IS outputs.
EEx edm[ia/ib] IIB/C T5	Control cabinet with control /signalling devices code 'd' and components 'm' including IS outputs

T_{amb} = -40°C to + 40°C
T_{amb} = -40°C to + 60°C, Requires use of cable with min. operating temp 100°C.

Degree of protection of enclosures: IP66 / IP67. Silicon gasket also satisfy IP68 (0,2 bar for 30 minutes)

Operating temperature for neoprene gasket - 40°C to + 100°C.
Operating temperature for silicon gasket -40 to + 200°C.

DET NORSKE VERITAS * 1864 *

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million.In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

15.2 Power dissipation in the various sizes of the enclosure:
The size is indicated in cm W*H*D. Where D is indicated as xx the depth may be 10cm or larger.

Size	Max. dissipated Power	Size	Max. dissipated Power
121009	6 W	5757xx	90 W
1515xx	15 W	5776xx	120 W
2828xx	30 W	7676xx	180 W
2838xx	40 W	7695xx	200 W
3020xx	30 W	9595xx	240 W
3838xx	40 W	76114xx	240 W
3845xx	50 W	95114xx	240 W
3857xx	65 W	95152xx	240 W
		95200xx	240 W

Intermediate sizes between the sizes described in the table may use the dissipated power of the nearest smaller size.

[16] Report No 2003-3246

16.1 Descriptive documents:

Number	Title	Rev.	Date
53-CNX-5	Procedure for temperature testing	A	2003-03-10
CNX-193-5	Type label for TNCC	A	2003-03-13
54-CNX-5	User manual TNCC Junction Box	A	2003-06-10
51-CNX-5	Document list	A	2003-06-20

[17] Special conditions for safe use: NA

[18] Essential Health and Safety Requirements
See part 9 of this certificate

END OF CERTIFICATE

DET NORSKE VERITAS * 1864 *

Appendix E: Cable Bushing, Adaptors and Blindplugs Certificate

[1] EC-TYPE EXAMINATION CERTIFICATE

[2] Component Intended for use on/in equipment or protected system intended for use in Potentially explosive atmospheres Directive 94/9/EC

[3] EC-Type Examination Certificate Number: Nemko 01ATEX471U

[4] Component: Cable Bushing, Adaptors and Blindplugs

[5] Applicant: Technor asa
[6] Address: Dusavikveien 39
P.O. Box 658
4003 STAVANGER
NORWAY

[7] This Component and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] Nemko AS, notified body number 0470 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. 200144110

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

CENELEC EN 50014: 1997 + A1: 1999 + A2: 1999 and CENELEC EN 50018: 2000
IEC 60079-0: 2000 and IEC 60079-1: 2001

[10] The sign "U" placed after the certificate number indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.

[11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC.
Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

[12] The marking of the component shall include the following:

Ex II 2 G EEx d IIC

Oslo 2004-04-30
This certificate replaces version dated 2002-07-11. Technical data is corrected.

Rolf Hoel
Certification Department

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Fax: +47 22 96 05 50
Enterprise number: NO 974404532

[13] Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 01ATEX471U

[15] Description of Component

This certificate covers two types of cable bushings (one electrical and one signal), adaptors and blindplugs with different thread sizes.

Type Designation

TNDLD (Standard cable bushings)

TNDLDF (Fibercable)

TNDLDC (cable bushings with flying lead)

TNDLDA (adaptors)

TNDLDB (blindplugs)

Technical data for cable bushings

Rated insulation voltage max.	1000V
Rated conductor cross-section. Quantity of cables and dimensions can vary in one cable bushing. Distance between copper wire and/or fibre min. 3mm.	Max. 16mm²
Type and size of threads	Typical M42x1,5 Typical M25x1,5 Other sizes possible
Min and max permissible temperature on the bushing surface	-20°C and 90°C(TNDLD, TNDLDC) -20°C and 76°C(TNDLDF) -20C and 120 C (TNDLDA, TNDLDB)

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Enterprise number: NO 974404532

[16] Report No. 200144110

Composed in total 48 pages and the listed descriptive documents.

Descriptive Documents

Name/Title	Drawing No.	Rev.	Date	Sheets
Cable bushing TNDLD M16, Simrad Material: SS316 or brass	DLD-21-4	A	25.10.01	1
Cable bushing TNDLD Material: SS316 or brass	DLD-25-4	A	25.10.01	1
Hylse for kabel innføring Type: TNDLD	DLD-26-4	B	20.12.01	1
Label for cable bushing type TNDLD	DLD-27-5	A	12.11.01	1
Label for cable bushing type TNDLD M24	DLD-28-5	A	12.11.01	1
Cable bushing with cylindrical joint type TNDLD	DLD-30-4	A	19.11.01	1
Certification drawing TNDLDF cable bushing with fibercable	DLDF-01-4	B	16.11.01	1
Arrangement drawing Alternative solutions	DLD-35-4	A		1

Routine Test

The cable bushing is a component which cannot be taken apart and the assembly conditions have been documented. According to EN 50018, section 16.2 (13.4.4) a routine test with the flameproof enclosure in compliance with section 16.1 is therefore not necessary.

[17] Schedule of Limitations

None

[18] Essential Health and Safety Requirements

See item 9

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SUPPLEMENT 1 TO EC-TYPE EXAMINATION CERTIFICATE

[13] Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 01ATEX471U

[15] Description of Equipment or Protective System

This Certificate is extended to include the following:

Rated conductor cross-section. Max. 240mm^2

The modifications are included in the descriptive documents.

Type Designation

TNDLD

[16] Report No.: 200237136

Composed in total 2 pages

Descriptive Documents

Name/Title	Drawing No.	Rev.	Date	Sheets
Cable bushing TNDLD Material : SS316 or brass	DLD-25-4	C	04.09.02	1

Oslo 2002-09-18

Rolf Hoel
Section Manager

Tore Irjall
Project Engineer

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Enterprise number:
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SUPPLEMENT 2 TO EC-TYPE EXAMINATION CERTIFICATE

[13] Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 01ATEX471U

[15] Description of Equipment or Protective System

This Certificate is extended to include additional variants of cable bushing type TNDLD, with alternative casting materials and design.

Type Designation

TNDLD

Technical data for cable bushings

Min and max permissible temperature on the bushing surface: -40°C and 110°C

[16] Report No.: 12400

Oslo, 2003-12-17

Rolf Hoel

Rolf Hoel
Certification Manager

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Enterprise number:
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SUPPLEMENT 3 TO EC-TYPE EXAMINATION CERTIFICATE

[13] Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 01ATEX471U

[15] Description of Component

This supplement is issued due to adding an alternative bushing type TNDLDE for coax cable. Same type of design and cable jacket as previously certified TNDLD.

Type Designation

TNDLDE (Coax cable)

Technical data for cable bushings

Rated insulation voltage max.	1000V
Rated conductor cross-section. Quantity of cables and dimensions can vary in one cable bushing. Distance between copper wire and/or fibre min. 3mm.	Max. 16mm²
Type and size of threads	Typical M42x1,5 Typical M25x1,5 Other sizes possible
Min and max permissible temperature on the bushing surface	-40°C and 110°C (TNDLD, TNDLDC, TNDLDE) -20°C and 76°C (TNDLDF) -40C and 120 C (TNDLDA, TNDLDB)

[16] Report No.: 32938

Oslo, 2005-01-18

Rolf Hoel

Rolf Hoel
Certification Department

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Enterprise number:
NO 974404532

Appendix F: RK Terminals Certificate

[1] EC-TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protected System Intended for use
in Potentially explosive atmospheres
Directive 94/9/EC

[3]	EC-Type Examination Certificate Number:	Nemko 06ATEX1136U
[4]	Equipment or Protective System:	Terminal blocks
[5]	Applicant:	Conta-Clip Verbindungstechnik GmbH
[6]	Address:	Otto Hahn Strasse 7 D-33161 Hövelhof GERMANY
[5]	Manufacturer:	Conta-Clip Verbindungstechnik GmbH
[6]	Address:	Otto Hahn Strasse 7 D-33161 Hövelhof GERMANY

[7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] Nemko AS, notified body number 0470 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. 62341

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

CENELEC EN 60079-0: 2004, CENELEC EN 60079-7:2004
CENELEC EN 50281-1-1:1998 + A1:2002

[10] The sign "U" placed after the certificate number indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.

[11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified component. If applicable, further requirements of this Directive apply to the manufacture and supply of this component.

[12] The marking of the equipment or protective system shall include the following :

Ex II 2 GD EEx e II

Oslo, 2006-08-04

Rolf Hoel
Certification Department

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Enterprise number: NO 974404532

[13] Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 03ATEX020U

[15] Description of Equipment or Protective System

This Certificate covers a range of terminal blocks

Type Designations	Rated cross section	Voltage	Max. load current	Mounting rail	Colour
RK 2,5 E beige	2,5mm^2	690V	26A	TS 32 / TS 35	Beige
RK 2,5 E blau	2,5mm^2	690V	26A	TS 32 / TS 35	Blue
RK 2,5-4 E beige	4,0mm^2	690V	34A	TS 32 / TS 35	Beige
RK 2,5-4 E blau	4,0mm^2	690V	34A	TS 32 / TS 35	Blue
RK 6-10 E beige	10,0mm^2	690V	61A	TS 35	Beige
RK 6-10 E blau	10,0mm^2	690V	61A	TS 35	Blue
RK 16 E beige	16,0mm^2	690V	82A	TS 32 / TS 35	Beige
RK 16 E blau	16,0mm^2	690V	82A	TS 32 / TS 35	Blue
RK 35 E beige	35,0mm^2	690V	135A	TS 32 / TS 35	Beige
RK 35 E blau	35,0mm^2	690V	135A	TS 32 / TS 35	Blue
RKD 2,5 E beige	2,5mm^2	400V	26A	TS 32 / TS 35	Beige
RKD 2,5 E blau	2,5mm^2	400V	26A	TS 32 / TS 35	Blue
RKD 4 E beige	4,0mm^2	400V	34A	TS 32 / TS 35	Beige
RKD 4 E blau	4,0mm^2	400V	34A	TS 32 / TS 35	Blue
RK 1,5-4/15 E beige	4,0mm^2	400V	34A	TS 15	Beige
RK 1,5-4/15 E blau	4,0mm^2	400V	34A	TS 15	Blue
SL 2,5/32 E	2,5mm^2			TS 32	Y/G
SL 2,5/35 E	2,5mm^2			TS 35	Y/G
SL 4/32 E	4,0mm^2			TS 32	Y/G
SL 4/35 E	4,0mm^2			TS 35	Y/G
SL 10/32 E	10,0mm^2			TS 32	Y/G
SL 10/35 E	10,0mm^2			TS 35	Y/G
SL 16/32 E	16,0mm^2			TS 32	Y/G
SL 16/35 E	16,0mm^2			TS 35	Y/G
SL 35/32 E	35,0mm^2			TS 32	Y/G
SL 35/35 E	35,0mm^2			TS 35	Y/G

The maximum admissible temperature in continuous service is 100°C

Accessories: Mounting rail TS 15 (DIN EN 50045), TS 32 (DIN EN 50035) or TS 35 (DIN EN 50022)

Terminal blocks with type designation SL. are protective conductor terminal blocks

[16] Report No.: 62341

Descriptive Documents

Name/Title	Drawing No.	Rev.	Date	Sheets
REIHENKLEMME RK2,5; RK2,5 E	RK25GZ	1)	22.1.03 (1991-06-17)	1 (BL1)
REIHENKLEMME RK 2,5 beige E Best.-Nr.: 1426.2	RK25ST3	1)	(1991-07-02)	3/4

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Enterprise number:
NO 974404532

REIHENKLEMME RK 2,5 blau E Best.-Nr.: 1426.5	RK25ST4	1)	(1991-07-02)	4/4
ISOLIERGEHAEUSE fuer RK 2,5	RK25ISOB1	8)	9.6.05	1 (BL1)
STROMSCHIENE RK 2,5	RK25STS	05	04.08.04)	1
ZUGBÜGEL SRK 2,5	SRK25ZB	2	9.12.99 (1987-01-13)	1
Schraube M 2,5 x 6,5 Best.-Nr.: 99034.1	SM25X65	3)	11.5.98 (1987-07-27)	1
REIHENKLEMME RK2,5-4; RK2,5-4 E	RK2540GZ	1)	22.1.03 (1991-06-20)	1
REIHENKLEMME RK 2,5-4 beige E Best.-Nr.: 1427.2	RK2540ST3	1)	(1991-07-01)	3/4
REIHENKLEMME RK 2,5-4 blau E Best.-Nr.: 1427.5	RK2540ST4	1)	(1991-07-01)	4/4
ISOLIERGEHAEUSE für RK 2,5-4; RK 2,5-4 E	RK2540ISOB1	8)	22.1.03 (1989-04-24)	1 (BL1)
STROMSCHIENE RK 2,5-4	RK2540STS	2)	2.5.01 (1989-06-19)	1
ZUGBÜGEL RK 2,5-4	RK2540ZB	2)	19.08.02 (1988-12-21)	1
SCHRAUBE M 3 x 9,5 Best.-Nr.: 99001.3	SM30X95R	3)	11.5.98 (1988-12-21)	1
REIHENKLEMME RK6-10; RK6-10 E	RK100GZ	1)	22.1.03 (1991-06-20)	1
REIHENKLEMME RK 6-10 beige E Best.-Nr.: 1430.2	RK100ST3	1)	(1991-07-01)	3/4
REIHENKLEMME RK 6-10 blau E Best.-Nr.: 1430.5	RK100ST4	1)	(1991-07-01)	4/4
ISOLIERGEHAEUSE für RK 6-10; RK 6-10 E	RK100ISOB1	8)	22.1.03 (1989-08-22)	1 (BL1)
STROMSCHIENE RK 6-10	RK100STS	3)	6.9.96 (1989-10-27)	1
ZUGBÜGEL für RK 6-10	RK100ZB	1	9.12.99 (1997-06-18)	1
SCHRAUBE M 4 x 9,5	SM40X95	-	(1989-02-10)	1
REIHENKLEMME RK16; RK16 E	RK160GZ	1)	22.1.03 (1991-06-20)	1

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REIHENKLEMME RK 16 beige E Best.-Nr.: 1431.2	RK160ST3	2)	(1991-07-01)	3/4
REIHENKLEMME RK 16 blau E Best.-Nr.: 1431.5	RK160ST4	2)	(1991-07-01)	4/4
ISOLIERGEHAEUSE für RK 16; RK 16 E	RK160ISOB1	7)	23.1.03 (1990-07-16)	1 (BL1)
STROMSCHIENE RK 16	RK160STS	2)	01.08.00 (1994-12-10)	1
ZUGBÜGEL RK 16	RK160ZB	06	07.01.03 (1998-01-06)	1
SCHRAUBE M 5 x 11	SM50X110R	-	(1994-07-09)	1
REIHENKLEMME RK35; RK35 E	RK350GZ	1)	22.1.03 (1991-06-21)	1
REIHENKLEMME RK 35 beige E Best.-Nr.: 1432.2	RK350ST3	1)	(1991-07-01)	3/4
REIHENKLEMME RK 35 blau E Best.-Nr.: 1432.5	RK350ST4	1)	(1991-07-01)	4/4
ISOLIERGEHAEUSE für RK 35; RK 35 E	RK350ISOB1	9)	23.1.03 (1990-07-18)	1 (BL1)
STROMSCHIENE RK 35	RK350STS	1)	26.1.95 (1994-12-10)	1
ZUGBÜGEL RK 35	RK350ZB	02	16.08.02 (1998-01-07)	1
SCHRAUBE M 6 x 14,5	SM60X145	-	(1994-11-08)	1
REIHENKLEMME RKD2,5; RKD2,5 E	RKD25GZ	1)	22.1.03 (1991-06-21)	1
REIHENKLEMME RKD 2,5 beige E Best.-Nr.: 1428.2	RKD25ST3	1)	(1991-07-02)	3/4
REIHENKLEMME RKD 2,5 blau E Best.-Nr.: 1428.5	RKD25ST4	1)	(1991-07-02)	4/4
ISOLIERGEHAEUSE für RKD 2,5; RKD 2,5 E	RKD25ISOB1	6)	31.5.05	1 (BL1)
STROMSCHIENE fuer RKD 2,5	RKD25STS	3)	10.05.02 (1988-10-21)	1
STROMSCHIENE SRK 2,5	SRK25STS	04	10.10.03	1
Schraube M 2,5 x 6,5 Best.-Nr: 99034.1	SM25X65	3)	11.5.98 (1987-07-27)	1

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ZUGBÜGEL SRK 2,5	SRK25ZB	2	9.12.99 (1987-01-13)	1
REIHENKLEMME RKD 4; RKD 4 E	RKD40GZ	1)	22.1.03 (1991-06-21)	1 (BL1)
REIHENKLEMME RKD 4 beige E Best.-Nr.: 1429.2	RKD40ST3	1)	(1991-07-01)	3/4
REIHENKLEMME RKD 4 blau E Best.-Nr.: 1429.5	RKD40ST4	1)	(1991-07-01)	4/4
ISOLIERGEHAEUSE für RKD 4; RKD 4 E	RKD40ISOB1	9)	22.1.03 (1988-10-25)	1 (BL1)
STROMSCHIENE RKD 4	RKD40STS	01	23.1.95 (1989-06-27)	1
STROMSCHIENE RK 1,5-4	RK1540STS	02	2.5.01 (1989-06-10)	1
SCHRAUBE M 3 x 6,0 Best.-Nr: 99005.3	SM30X60	4)	11.5.98 (1989-12-16)	1
ZUGBÜGEL RK 1,5-4	RK1540ZB	1	9.12.99 (1988-12-20)	1
REIHENKLEMME RK1,5-4/ 15 RK1,5/ 15 E	RK154015GZ	1)	22.1.03 (1991-06-19)	1 (BL1)
REIHENKLEMME RK 1,5-4/ 15 beige E Best.-Nr.: 1433.2	RK154015ST3	1)	(1991-07-01)	3/4
REIHENKLEMME RK 1,5-4/ 15 blau E Best.-Nr.: 1433.5	RK154015ST4	1)	(1991-07-01)	4/4
ISOLIERGEHAEUSE für RK 1,5-4/15; RK 1,5-4/ 15 E	RK154015ISOB1	2)	22.1.03 (1990-05-18)	1 (BL1)
STROMSCHIENE RK 1,5-4	RK1540STS	02	2.5.01 (1989-06-10)	1
ZUGBÜGEL RK 1,5-4	RK1540ZB	1	9.12.99 (1988-12-20)	1
SCHRAUBE M 3 x 6,0 Best.-Nr.: 99005.3	SM30X60	4)	11.5.98 (1989-12-16)	1
SCHUTZLEITERKLEMME SL 2,5/ 32; SL 2,5/ 32 E	SL2532HGZ	1)	10.1.03 (1991-07-03)	1
Schutzleiterklemme SL 2,5/ 32 E Best.-Nr.: 1434.2 (gelb/gruen)	SL2532HST2	1)	(1991-07-03)	2/2
Isoliergehaeuse fuer SL2,5/ 32 und SL2,5/ 32 E	SL2532HISO	4)	10.1.03 (1987-07-02)	1
Klemmstueck	SL2532KLS	-	(1987-07-01)	1
Klemmbugel SL(N) 2,5/32	SL2532BGL	-	8.7.87	1

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Schraube M 2,5 x 20,5 Best.-Nr.: 9107.8	SM25X205	2)	18.11.96 (1995-08-29)	1
Schraube M 2,5 x 6,5 Best.-Nr: 99034.1	SM25X65	3)	11.5.98 (1987-07-27)	1
ZUGBÜGEL SRK 2,5	SRK25ZB	2	9.12.99 (1987-01-13)	1
SCHUTZLEITERKLEMME SL 2,5/ 35; SL 2,5/ 35 E	SL2535HGZ	1)	10.1.03 (1991-07-03)	1
Schutzleiterklemme SL 2,5/ 35 E Best.-Nr.: 1435.2 (gelb/gruen)	SL2535HST2	1)	(1991-07-03)	2/2
Isoliergehaeuse für SL 2,5/ 35; SL 2,5/ 35 E	SL2535HISO	5)	10.1.03 (1987-06-01)	1
Klemmhebel SL 2,5/ 35	SL2535KLH	1)	28.9.95 (1987-05-29)	1
Buegel SL 2,5/35	SL2535BGL	2)	25.07.95 (1987-05-29)	1
Schraube M 2,5 x 16 Best.-Nr.: 9107.9	SM25X160	3)	1.4.99 (1991-10-30)	1
Schraube M 2,5 x 6,5 Best.-Nr: 99034.1	SM25X65	3)	11.5.98 (1987-07-27)	1
ZUGBÜGEL SRK 2,5	SRK25ZB	2	9.12.99 (1987-01-13)	1
Vierkantmutter M 2.5	vierkantmutter_M25	-	17.1.03	1
SCHUTZLEITERKLEMME SL4/ 32; SL4/ 32 E	SL4032GZ	1)	10.1.03 (1991-06-18)	1
SCHUTZLEITERKLEMME SL4/ 35; SL4/ 35 E	SL4035GZ	1)	10.1.03 (1991-06-18)	1
Schutzleiterklemme SL4/ 32 E Best.-Nr.: 1436.2	SL4032ST2	1)	(1991-07-02)	2/2
Schutzleiterklemme SL4/ 35 E Best.-Nr.: 1437.2	SL4035ST2	1)	(1991-07-02)	2/2
ISOLIERGEHAEUSE für SL4/ 32/ 35; SL4/ 32/ 35 E	SL40ISOB	4)	10.1.03 (1990-03-29)	1
BÜGEL für SL4- 10/ 32	SL40100BGL32	2)	4.1 00 (1991-03-09)	1
BÜGEL für SL4- 10/ 35	SL40100BGL35	3)	4.1.00 (1991-03-07)	1
KLEMMHEBEL für SL 4-10/ 35	SL40100KLH	02	17.12.99 (1991-03-01)	1
KLEMMSTÜCK für SL 4- 10/ 32	SL40100KLS	-	2003-01-13)	1
Schraube AM 3,5x25 DIN 84 Für SL 4 (10) 90.13.5	1060.02.4	-	(1985-12-10)	1
Vierkantmutter M 3.5	vierkantmutter_M35	-	17.1.03	1

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SCHRAUBE M 3 x 9,5 Best.-Nr: 99001.3	SM30X95R	3)	11.5.98 (1988-12-21)	1
ZUGBÜGEL RK 2,5-4	RK2540ZB	2)	19.08.02 (1988-12-21)	1
SCHRAUBE M 4 x 9,5	SM40X95	-	(1989-02-10)	1
ZUGBÜGEL für RK 6-10	RK100ZB	1	9.12.99 (1997-06-18)	1
SCHUTZLEITERKLEMME SL 10/ 32, SL 10/ 32E	SL10032GZ	1)	10.1.03 (1991-06-18)	1
SCHUTZLEITERKLEMME SL 10/ 35, SL 10/ 35E	SL10035GZ	1)	10.1.03 (1991-06-18)	1
Schutzleiterklemme SL 10/ 32 E Best Nr.: 1438.2	SL10032ST2	1)	(1991-07-02)	2/2
Schutzleiterklemme SL 10/ 35 E Best Nr.: 1439.2	SL10035ST2	1)	(1991-07-02)	2/2
ISOLIERGEHAEUSE für SL 10/ 32/ 35; SL 10/ 32/ 35 E	SL100ISOB1	3)	13.1.03 (1990-04-03)	1
Beilage für SL 10	sl100b1	-	(2000-02-08)	1
SCHUTZLEITERKLEMME SL 16/ 32; SL 16/ 32 E	SL16032GZ	1)	15.1.03 (1991-11-14)	1
SCHUTZLEITERKLEMME SL 16/ 35; SL 16/ 35 E	SL16035GZ	1)	20.1.03 (1991-11-14)	1
SCHUTZLEITERKLEMME SL16/ 32 E Best.-Nr.: 1440.2	SL16032ST2	1)	(1991-11-14)	2/2
SCHUTZLEITERKLEMME SL16/ 35 E Best.-Nr.: 1441.2	SL16035ST2	1)	(1991-11-14)	2/2
ISOLIERGEHAEUSE für SL16/ 32/ 35; SL16/ 32/ 35 E	SL160ISOB1	4)	20.1.03 (1991-11-06)	1 (BL1)
BÜGEL für SL 16/ 32	SL16032BGL	-	(1991-11-18)	1
BÜGEL für SL 16/35	SL16035BGL	-	(1991-11-18)	1
KLEMMHEBEL für SL 16/ 35	SL160KLH	-	(1991-11-14)	1
ZUGHEBEL für SL 16/ 32	SL160ZHB	-	(1991-11-14)	1
STROMSCHIENE SL 16	SL160STS	1)	01.08.00 (1994-12-12)	1
SCHRAUBE M 4 x 20 DIN 84	SM40X200	-	(1991-12-18)	1
VIERKANTMUTTER – M4	VKM4	-	(1991-11.18)	1

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SCHRAUBE M 5 x 11	SM50X110R	-	(1994-07-09)	1
ZUGBÜGEL RK 16	RK160ZB	06	07.01.03 (1998-01-06)	1
SCHUTZLEITERKLEMME SL 35/ 32, SL 35/ 32 E	SL35032GZ	1)	10.1.03 (1991-11-25)	1
SCHUTZLEITERKLEMME SL 35/ 35; SL 35/ 35 E	SL35035GZ	1)	10.1.03 (1991-11-25)	1
SCHUTZLEITERKLEMME SL35/ 32 E Best.-Nr.: 1442.2	SL35032ST2	1)	(1991-11-14)	2/2
SCHUTZLEITERKLEMME SL35/ 35 E Best.-Nr.: 1443.2	SL35035ST2	1)	(1991-11-26)	2/2
ISOLIERGEHAEUSE für SL35/ 32/ 35; SL35/ 32/ 35 E	SL350ISOB1	6)	20.1.03 (1991-11-13)	1 (BL1)
BÜGEL für SL 35/ 32	SL35032BGL	-	(1991-11-25)	1
BÜGEL für SL 35/35	SL35035BGL	-	(1991-11-25)	1
STROMSCHIENE SL 35	SL350STS	1)	26.1.95 (1994-12-13)	1
HALTESTUECK SL 35	SL350HST	-	(1995-11-17)	1
SCHRAUBE M 5 x 25	SM50X250	-	(1991-11-26)	1
SCHRAUBE M 6 x 14,5	SM60X145	-	(1994-11-08)	1
ZUGBÜGEL RK 35	RK350ZB	02	16.08.02 (1998-01-07)	1
ZUGHEBEL für SL 16/ 32	SL160ZHB	-	(1991-11-14)	1
Vierkantmutter M 5	vierkantmutter_M5	-	17.1.03	1
KLEMMHEBEL für SL 16/ 35 / SL 35/ 35	SL160KLH	-	(1991-11-14)	1
ABSCHLUSSPLATTE für RK 1,5-4 / RKB 1,5-4	RK1540AP	-	1990-05-22	1
ABSCHLUSSPLATTE AP 2,5-10	RK2540AP	-	1988-08-28	1
ABSCHLUSSPLATTE fuer RK16	RK160AP	02	1995-07-13	1
ABSCHLUSSPLATTE TRENNWAND fuer RK35 / RK16	RK350	03	1998-05-04	1
ABSCHLUSSPLATTE fuer RKD 2,5 u. RKD 4	RKD2540AP	-	1988-10-27	1

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The insulation housing of the terminal blocks are made of thermoplastic material polyamide PA 6.6

Routine test
A routine test shall be carried out on each terminal block according to clause 7 of CENELEC EN 60079-7.
Each terminal block shall be submitted to an electric strength test with a voltage of (2 U + 1000)V, U being the rated voltage.

[17] Special Conditions for Safe Use
None

[18] Essential Health and Safety Requirements
See item 9

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Appendix G: SL BKA Terminal Certificate

Nemko

[1] EC-TYPE EXAMINATION CERTIFICATE

[2] Equipment or Protected System Intended for use
in Potentially explosive atmospheres
Directive 94/9/EC

[3]	EC-Type Examination Certificate Number:	Nemko 06ATEX1135U
[4]	Equipment or Protective System:	Terminal blocks
[5]	Applicant:	Conta-Clip Verbindungstechnik GmbH
[6]	Address:	Otto Hahn Strasse 7 D-33161 Hövelhof GERMANY
[5]	Manufacturer:	Conta-Clip Verbindungstechnik GmbH
[6]	Address:	Otto Hahn Strasse 7 D-33161 Hövelhof GERMANY

[7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] Nemko AS, notified body number 0470 in accordance with Article 9 of Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no. 61927

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

CENELEC EN 60079-0: 2004, CENELEC EN 60079-7:2004
CENELEC EN 50281-1-1:1998 + A1:2002

[10] The sign "U" placed after the certificate number indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.

[11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified component. If applicable, further requirements of this Directive apply to the manufacture and supply of this component.

[12] The marking of the equipment or protective system shall include the following :

Ex II 2 GD EEx e II

Oslo, 2006-08-04

Rolf Hoel
Certification Department

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[13] Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE No Nemko 06ATEX1135U

[15] Description of Equipment or Protective System

This Certificate covers a range of terminal blocks

Type Designations	Rated cross section	Voltage	Max. load current	Mounting rail	Color
BKA 2,5/1 E beige	2,5mm^2	275V	24A	(None)	Beige
BKA 2,5/1 E blau	2,5mm^2	275V	24A	(None)	Blue
BKA 4/1 E beige	4,0mm^2	275V	32A	(None)	Beige
BKA 4/1 E blau	4,0mm^2	275V	32A	(None)	Blue
BKA 10/1 E beige	10,0mm^2	275V	57A	(None)	Beige
BKA 10/1 E blau	10,0mm^2	275V	57A	(None)	Blue
SL 4/15/1 E	4,0mm^2	-	-	TS 15	Y/G

The maximum admissible temperature in continuous service is 100°C

Accessories: End holder EH 2, EH 3. SL 4/15 can be mounted on rail TS 15 (DIN EN 50045)

Terminal blocks with type designation SL. are protective conductor terminal blocks

The quantity of poles for BKA 2,5/*, BKA 4/* and BKA 10/* indicating the number of poles from 1 to 24, but on both sides an end bracket is necessary to mount. (Direct mounting)

[16] Report No.: 61927

Descriptive Documents

Name/Title	Drawing No.	Rev.	Date	Sheets
REIHENKLEMME BKA2,5; BKA2,5 E	BKA25GZ	1)	10.1.03 (1991-06-18)	1
REIHENKLEMME BKA2,5 beige E Best.-Nr.: 1405.2	BKA35ST3	1)	1991-07-01	3/4
REIHENKLEMME BKA2,5 blau E Best.-Nr.: 1405.5	BKA35ST4	1)	1991-07-01	4/4
ISOLIERGEHAEUSE für BKA 2,5; BKA 2,5 E	BKA25ISOB1	2)	21.1.03 (1990-04-25)	1 (BL1)
STROMSCHIENE fuer BKA 2,5	BKA25STS	1)	13.6.95 (1990-04-20)	1
ZUGBÜGEL SRK 2,5	SRK25ZB	2)	9.12.99 (1987-01-13)	1
Schraube M 2,5 x 6,5 Best.-Nr: 99034.1	SM25X65	3)	11.5.98 (1987-07-27)	1

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REIHENKLEMME BKA 4; BKA 4 E	BKA40GZ	4)	13.10.04	1
REIHENKLEMME BKA 4 beige E Best.-Nr.: 1406.2	BKA40ST3	2)	(1991-07-02)	3/4
REIHENKLEMME BKA 4 blau E Best.-Nr.: 1406.5	BKA40ST4	2)	(1991-07-02)	4/4
ISOLIERGEHAEUSE für BKA 4; BKA 4 E	BKA40ISOB1	4)	13.10.04	1 (BL1)
STROMSCHIENE fuer BKA 4	BKA40STS	-	(1997-07-30)	1
ZUGBÜGEL RK 1,5-4	RK1540ZB	1)	9.12.99 (1988-12-20)	1
Schraube M 3 x 6,0 Best.-Nr: 99005.3	SM30X60	4)	11.5.98 (1989-12-16)	1
REIHENKLEMME BKA10; BKA10 E	bka100gz	1)	22.1.03 (1996-12-16)	1
REIHENKLEMME BKA10 beige E Best.-Nr.: 1407.2	BKA100ST3	1)	(1996-12-16)	3/4
REIHENKLEMME BKA10 blau E Best.-Nr.: 1407.5	BKA100ST4	1)	(1996-12-16)	4/4
Isoliergehäuse für BKA10; BKA10 E	bka100isob1	1)	22.1.03 (1995-02-11)	1 (BL1)
Stromschiene für BKA 10	bka100sts	-	(1995-02-12)	1
ZUGBÜGEL für RK 6-10	RK100ZB	1)	9.12.99 (1997-06-18)	1
SCHRAUBE M 4 x 9,5	SM40X95	-	(1989-02-10)	1
SCHUTZLEITERKLEMME SL4/ 15; SL4/ 15 E	SL4015GZ	1)	10.1.03 (1993-06-24)	1
Schutzleiterklemme SL 4/ 15 E Best.-Nr.: 1404.2	SL4015ST2	1)	(2003-01-10)	2 (BL2)
ISOLIERGEHÄUSE für SL4/ 15 und SL 4/ 15 E	SL4015ISOB1	-	(2003-01-09)	1
Klemmhebel für SL4/ 15	Sl4015klh	-	(1995-10-18)	1
Schraube M 3 x 16 Best.-Nr.: 99044.1	SM30X160	3)	29.9.00 (1993-06-24)	1

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BEILAGE für SL 4/15	SL4015BL	-	15.12.02	1/1
Federring A3 nach DIN 127	federring_a3	-	28.3.02	1
Vierkantmutter M3	4KT_M3	-	02-Apr-01	1/1
ZUGBÜGEL RK 1,5-4	RK1540ZB	1)	9.12.99 (1988-12-20)	1
Schraube M 3 x 6,0 Best.-Nr: 99005.3	SM30X60	4)	11.5.98 (1989-12-16)	1
BUEGEL fuer SL 4/ 15	SL4015BGLB1	-	(1991-09-11)	1
ENDHALER EH2 (für BKA)	BKAEH2B1	-	26.05.81	1
Endhalter EH3 (für BKA 10)	bkaeh3b1[1)]	1	25.11.96	1

The insulation housing of the terminal blocks are made of thermoplastic material polyamide PA 6.6

Routine test
A routine test shall be carried out on each terminal block according to clause 7 of CENELEC EN 60079-7.
Each terminal block shall be submitted to an electric strength test with a voltage of (2 U + 1000), U being the rated voltage.

[17] Special Conditions for Safe Use
None

[18] Essential Health and Safety Requirements
See item 9

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Postal address: P.O.Box 73 Blindern N-0314 OSLO, NORWAY
Office address: Gaustadalléen 30 0373 OSLO
Telephone: +47 22 96 03 30
Fax: +47 22 96 05 50
Enterprise number: NO 974404532

Appendix H: Switch Type ZBWE Certificate

INERIS
INSTITUT NATIONAL DE L'ENVIRONNEMENT INDUSTRIEL ET DES RISQUES

Parc Technologique ALATA
B.P. N°2 - 60550 Verneuil-en-Halatte - France
Tél. : (33) 44 55 66 77 - Fax (33) 44 55 67 04
Télex : 140 094 F

(2) **Component intended to be incorporate into equipment or protective system intended for use in explosive atmospheres Directive 94/9/EC**

(1) EC-TYPE EXAMINATION CERTIFICATE

(3) Number of the EC type examination certificate: **INERIS 02ATEX9007U**

(4) Component:

SWITCH TYPE ZBWE-...
(The points are replaced by numbers and letters corresponding to manufacturing variation)

(5) Manufacturer: **TECHNOR ATEX**

(6) Address: ZA Les Montagnes
F – 16430 CHAMPNIERS

(7) This component and any other acceptable alternative of this one are described in the appendix of this certificate and the descriptive documents quoted in this appendix.

(8) The INERIS, notified body and identified under number 0080, in accordance with article 9 of Council Directive 94/9/EC 23rd March 1994, certifies that this component fulfils the Essential of Health and Safety Requirements relating to the design and construction of equipment and protection systems intended for use in potentially explosive atmospheres, described in appendix II of the Directive.

The examinations and the tests are consigned in official report No P43158/02.

(9) The respect of the Essential Health and Safety Requirements is ensured by:

- conformity with:

EN 50 014	of June	1997 + A1 and A2
EN 50 018	of November	2000
EN 50 019	of July	2000
EN 50 281-1-1	of September	1998 + A1

- specific solutions adopted by the manufacturer to meet the Essential Health and Safety Requirements described in the descriptive documents.

(10) Sign U, when it is placed following the Number of the EC type examination certificate, indicates this one should not be wrongly considered as an EC type examination certificate delivered for equipment or protective system. This partial certification may be used as a basis for the certification of equipment or protective system.

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(11) This EC type examination certificate refers only to the design and the construction of the component specified. Further requirements of the Directive apply to the manufacturing process and supply of this component. These are not covered by this certificate.

(12) The marking of the component will have to contain:

⟨Ex⟩ II 2 GD **EEx ed IIC**

Verneuil-en-Halatte, 2002 12 31

X. LEFEBVRE

Engineer at the Laboratory of Certification of ATEX Equipment

Director of the Certifying Body,
By delegation
B. PIQUETTE
Deputy manager of Certification

ATMOSPHERES EXPLOSIVES ORGANISME NOTIFIE INERIS NOTIFIED BODY EXPLOSIVE ATMOSPHERES

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(13) # ANNEX

(14) EC TYPE EXAMINATION CERTIFICATE N°INERIS 02ATEX9007U

(15) **DESCRIPTION OF COMPONENT**

The enclosure, made in polyester or polyamide, is intended to contain a switch.

PARAMETERS RELATING TO THE SAFETY

Maximum supply voltage : 415 V
Maximum intensity : 6 A
Maximum dissipated power: 1 W

Thermal stability of the microswitch : 80°C.

MARKING

Marking must be readable and indelible; it must comprise the following indications:

- TECHNOR ATEX
  F - 16430 CHAMPNIERS
- ZBWE-...(*)
- INERIS 02ATEX9007U
- Ex II 2 GD EEx ed IIC
- Nominal voltage and current

(*) The points are replaced by numbers and letters corresponding to the manufacturing variation.

The whole of marking can be carried out in the language of the country of use.

The component must also carry the marking normally envisaged by the standards of construction which relate to it.

ROUTINE EXAMINATIONS AND TESTS

According to 16.2 of standard EN 50 018, the apparatus is exempted of routine test due to the fact that the volume is less than 10 cm^3.

According to 7.1 of the EN 50 019, each example defined above must have successfully passed before delivery a dielectric strength test.

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(16) DESCRIPTIVE DOCUMENTS

The report is composed of the documents quoted hereafter, constituting the descriptive file of the apparatus, object of this certificate.

- Technical file TN066A04 rév.01 dated on 2002.11.05 and signed on 2002.12.26

This file includes 4 items (11 pages).

(17) SPECIAL CONDITIONS FOR SAFE USE

The switch must be integrated into an enclosure protected by a protection mode compatible with the considered utilisation.

(18) ESSENTIAL REQUIREMENTS OF SAFETY AND HEALTH

The respect of the Essential Health and Safety Requirements is ensured by:

- conformity to the European standards EN 50 014, EN 50 018, EN 50 019 and EN 50281-1-1.
- the whole of the provisions adopted by the manufacturer and described in the descriptive documents.

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Appendix I: Blanking Plug Certificate

sira
Certification Service

1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: Sira 00ATEX1094

4 Equipment: AD-U Series Adaptors, RD-U Series Reducers and PD-U Series Stopping Plugs

5 Applicant: Redapt Ltd

6 Address: Units 46 & 47
Darlaston Central Trading Estate
Salisbury Street
Darlaston
WS10 8XB

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report number R51X5208B.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 50014:1997 (amendments 1 & 2)
prA1 EN 50018:1999
EN 50019:1994
EN 50281-1-1:1998

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

Ex I M2 EEx de I and/or Ex II 2 GD EEx de IIC

Re-issued 1 November 2000
To replace report number R51X5208A with R51X5208B.

Project Number	53V7330
Date	2 August 2000
Re-issued	1 November 2000
C. Index	07

M D Shearman
Certification Manager

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Email: exhazard@siratc.co.uk
Sira Certification Service is a service of Sira Test & Certification Ltd

ST&C(Chester) Form 9176 Issue 4

SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE Sira 00ATEX1094

13 **DESCRIPTION OF EQUIPMENT**

The AD-U and RD-U Series are ranges of hexagonal bodied metallic 'Ex d'e adaptors or reducers. Each comprises a hollow body with an external male thread and an internal female thread. The devices are used to convert an existing cable entry aperture to a different thread form and/or size. The body may optionally be fitted with an 'O' ring seal. Thread combinations are such that minimum wall thickness should be maintained.

The PD-U Series is a range of 'Ex de' threaded stopping plugs each comprising a threaded body with a hexagonal socket for tightening. The devices are used to close unused apertures in associated component.

Design Options:

Female Threadforms Options:

ISO Metric (to BS3463)

Male Threadforms Options

ISO Metric (to BS3463)
PG to DIN40430
NPT (ANSI/ASME B1.20.1)
NPS (ANSI/ASME B1.20.1)
ISO Pipe Thread (BS21) BSPP/BSPT
Imperial conduit ET BS31
BSP to BS21
Any threadform conforming to Table 3 of BS EN 50018.

Material Options:

Brass BS 2874 (CZ121)
Mild Steel to BS970 (EN1A)
Stainless Steel to BS970 (316)
Aluminium HE30 (BS754 Parts 1,2,3 & 6/BS755 1,2,3 & 6) – (Not for Group I applications)

Plating Options:

Metallic variants may be suitably plated to the appropriate British, European or ISO recognised standards.

Date 2 August 2000
Re-issued 1 November 2000

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE Sira 00ATEX1094

14 **DESCRIPTIVE DOCUMENTS**

14.1

Drawing No.	Rev.	Sheet	Date	Title
88-B-1E97	2	1 of 1	Jun 00	EExdeI/IIc ADAPTORS
88-B-2E97	2	1 of 1	Jun 00	EExdeI/IIc REDUCERS
88-B-3E97	2	1 of 1	Jun 00	EExdeI/IIc DOME HEAD STOPPING PLUGS
ATEX-01-PDM	1	1 of 1	Apr 00	MARKING ARRANGEMENTS FOR ATEX PRODUCTS

14.2 Report No. R51X5208B

15 **SPECIAL CONDITIONS FOR SAFE USE** (denoted by X after the certificate number)

None

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSR'S)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in Report No. R51X5208B.

17 **CONDITIONS OF CERTIFICATION**

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of SCS Certificates.

17.2 The aluminium devices shall not be marked with any information that indicates that they are suitable for group I use.

Date 2 August 2000
Re-issued 1 November 2000

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EC TYPE-EXAMINATION CERTIFICATE VARIATION

CERTIFICATE NUMBER	Sira 00ATEX1094	Dated	2 August 2000
VARIATION NUMBER	1 (ONE)	Dated	7 December 2000

VARIATION TO EQUIPMENT

To permit:

1 The re-design of the profile and the re-positioning of the marking onto the face of the devices

DESCRIPTIVE DOCUMENTS

Number	Sheet	Rev	Date	Description
88-C-1E00	1 of 1	1	05 Oct 00	EExde I & IIC Certified Adaptors
88-C-2E00	1 of 1	1	05 Oct 00	EExde I & IIC Certified Reducers

ADDITIONAL CONDITIONS OF CERTIFICATION

None

File No 53V7400

Report No. NA

M D Shearman
Certification Manager

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